3.02 EXISTING FACILITIES

A. Roadway

USH 51 travels 16.1 miles from its junction with IH 39/90 to Burma Road in the Village of McFarland. The roadway passes through both urban and rural areas and incorporates a number of cross sections. These include two-lane, four-lane undivided, and four-lane divided sections. Figure 3.02-1 shows the USH 51 cross sections and speed limits throughout the study corridor.

Six streets, all within the City of Stoughton, have signalized intersections, and over 50 side streets have stop-controlled intersections with USH 51. Within the City of Stoughton, there are approximately 45 private and commercial entrances per mile (on both sides of the roadway). Outside this urban area, there are approximately 10 private, commercial, and field entrances per mile.

There are two structures over the Yahara River, one each in McFarland and Stoughton, and one at-grade, two-track crossing with the Wisconsin and Southern Railroad in Stoughton. Appendix D contains a detailed analysis of existing conditions.

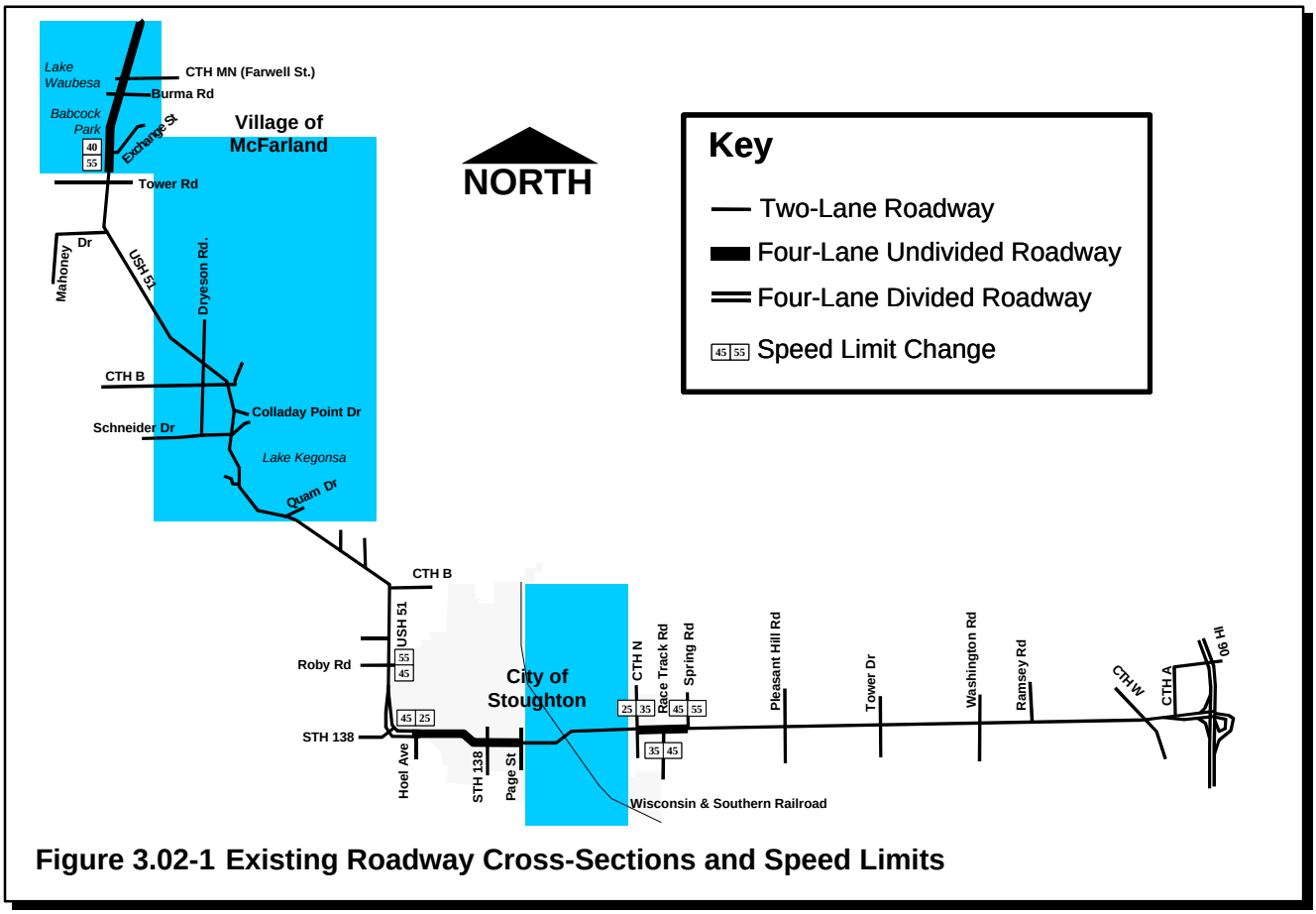

Figure 3.02-1 Existing Roadway Cross-Sections and Speed Limits

A specific discussion of the roadway follows. It divides the corridor into segments, beginning at I-39/90 and ending at Burma Road in McFarland.

1. IH 39/90 to CTH A (east) (0.4 miles)

USH 51 splits from IH 39/90 at a free-flow interchange and continues as a four-lane divided highway to 0.1 miles west of CTH A (east). This area is largely rural, and the speed limit is 55 mph. The shoulder width is 10 feet, of which 3 are paved.

Figure 3.02-2 CTH A (East) Intersection

At the unsignalized intersection with CTH A (east), right and left turn lanes are provided for both USH 51 approaches except the eastbound left turn. Figure 3.02-2 shows the USH 51/CTH A intersection.

2. CTH A (east) to Spring Road (4.9 miles)

Just west of CTH A (east), USH 51 becomes a two-lane roadway. This area is largely rural, and the speed limit is 55 mph. Travel lanes are 12 feet wide. The shoulder width is 10 feet, of which 3 feet are paved. There are two substandard vertical curves.

Figure 3.02-3 Rural USH 51

At intersections, turning and through movements on USH 51 share a single lane. There is a tunnel for golf carts near the CTH W intersection. Figure 3.02-3 shows rural USH 51.

3. Spring Road to CTH N (0.5 miles)

As it approaches the city limits just east of Spring Road, the cross section of USH 51 increases to four 12-foot lanes with curb and gutter. This area transitions from rural to urban land uses, and the speed limit decreases first to 45 mph and then to 35 mph.

At the signalized CTH N intersection, there are two lanes per USH 51 approach, but lane use is ambiguous because pavement markings are not well defined. Figure 3.02-4 shows USH 51 east of Stoughton.

Figure 3.02-4 USH 51 Just East of Stoughton

4. CTH N to Fifth Street (0.9 miles)

West from CTH N, this urban roadway consists of a 12-foot travel lane and 10-foot parking lane in each direction. The area is urban, and the speed limit is 25 mph. About 0.2 miles east of Fifth Street, USH 51 crosses two Wisconsin & Southern railroad tracks that are protected by lights but not gates. Figure 3.02-5 shows the railroad crossing.

Figure 3.02-5 Wisconsin & Southern Railroad Crossing

Curve data are not available for this segment. However, immediately east and west of the railroad crossing, the roadway curves both horizontally and vertically. These pairs of horizontal/vertical curves may be a geometric concern.

At intersections in this segment, turning and through movements on USH 51 share a single lane.

5. Fifth Street to Page Street (0.3 miles)

Reconstruction of this downtown segment was completed in 2003. The roadway consists of a 12-foot driving lane and 10-foot parking lane in each direction. The speed limit is 25 mph.

Just east of Page Street, a structure carries USH 51 over the Yahara River.

At all intersections within the segment, USH 51 has exclusive left turn lanes. Figure 3.02-6 shows this section of USH 51.

Figure 3.02-6 Downtown Stoughton

6. Page Street to Hoel Avenue (1.1 miles)

West from Page Street, the cross section of USH 51 increases to four 12-foot lanes. On-street parking is restricted. This area is urban, and the speed limit is 25 mph. There is one substandard vertical curve.

At the unsignalized intersection with Hamilton Street, the eastbound approach of USH 51 has an exclusive left turn lane. USH 51 has no exclusive left turn lanes at the STH 138 (east) and Kings Lynn Road intersections, which are both signalized. Figure 3.02-7 shows the Kings Lynn Road intersection.

Figure 3.02-7 Kings Lynn Road Intersection

7. Hoel Avenue to Roby Road (0.8 miles)

Just west of Hoel Avenue, USH 51 becomes a four-lane divided highway. Travel lanes are 12 feet wide. The shoulder width is 8 feet, of which 3 feet are paved. This area transitions from urban to rural, and the speed limit increases to 45 mph.

As the roadway curves to the north, it intersects STH 138 (west). About 0.4 miles north of this intersection (and 0.3 miles south of Roby Road), USH 51 transitions to a two-lane undivided cross section. Travel lanes are 12 feet wide. The shoulder width is 8 feet, of which 3 feet are typically paved.

At the Roby Road intersection, the northbound USH 51 approach has an exclusive right turn lane and a shared through/left turn lane. The southbound approach has a single shared lane. Figure 3.02-8 shows the Roby Road intersection.

Figure 3.02-8 Looking South From Roby Road

8. Roby Road to Tower Road (6.2 miles)

USH 51 continues as a two-lane roadway. Travel lanes are 12 feet wide. The shoulder width is 8 feet, of which 3 feet are typically paved. However, there is no paved shoulder at some intersections, and it has deteriorated to less than a foot in other areas. This area is rural, and the speed limit is 55 mph. There are two substandard horizontal curves. Figure 3.02-9 shows USH 51 between Roby Road and Tower Road.

Intersection geometries vary through this section. There are no exclusive left turn lanes. However, several intersections have bypass lanes, and several have right turn lanes that are frequently used as bypass lanes. At all other intersections, turning and through movements on USH 51 share a single lane.

Figure 3.02-9 Views of USH 51 Between Stoughton and McFarland

9. Tower Road to Burma Road (1.0 miles)

The intersection with Tower Road is near the crest of a hill. North of this intersection, the cross section increases to four 12-foot lanes. Specifically, the second southbound through lane ends just south of Tower Road, while the second northbound through lane begins immediately north of Exchange Street (see Figure 3.02-10). The southern portion of this segment is rural, but it transitions to urban as it approaches the Village of McFarland. The speed limit decreases to 40 mph.

Near Babcock Park, a structure carries USH 51 over the Yahara River.

There are no exclusive left turn lanes in this segment. An exclusive right turn lane at the Exchange Street intersection is frequently used by northbound through traffic as the second through lane begins immediately north of this intersection.

Figure 3.02-10 Exchange Street Intersection

B. Bicycle Facilities

There are no off-road paths or bicycle lanes through the corridor. South of McFarland, there is a short path in Dane County's Babcock Park that is used by bicyclists (see Figure 3.02-11). It continues along the west side of the USH 51 bridge over the Yahara River.

Figure 3.02-11 Babcock Park

On urban roadway segments, curbside through and parking lanes provide no additional width for cyclists. On segments without curb and gutter, the paved shoulder is discontinuous and more deteriorated than the adjacent travel lanes (see Figure 3.02-12). When present, the shoulder is typically 3 feet wide. AASHTO's 1999 Guide for the Development of Bicycle Facilities calls for a paved shoulder width greater than 4 feet on roadways with vehicle speeds above 50 mph. This represents minimum bicycle accommodation.[1]

Figure 3.02-12
Deteriorated Shoulder

The State Bicycle Map classifies rural USH 51 as "not recommended" for bicycle travel. In its description of this classification, it notes that, "Bicyclists should try to plan around these roads and/or use considerable caution when using them. Bicyclists should have significant amounts of expertise with these types of riding conditions if choosing these highways."[2]

The Federal Highway Administration's Bicycle Compatibility Index (BCI) provides another measure of the existing bicycle facilities within the urban and suburban portions of the corridor. The BCI model uses roadway characteristics to predict the comfort level of an average adult bicyclist. According to the model, a bicyclist would feel very uncomfortable on USH 51 in McFarland, moderately uncomfortable on the four-lane portion of USH 51 within Stoughton, and extremely uncomfortable on the two-lane portions of USH 51 within Stoughton. The model is not appropriate for rural conditions.[3]

The 2000 Bicycle Transportation Plan for Madison and Urban Dane County anticipates the addition of wide bicycle lanes/paved shoulders on USH 51 between IH 39/90 and McFarland. It also proposes a "special transportation corridor" to serve bicyclists between Stoughton and McFarland. Unlike USH 51, the conceptual route of this corridor is to the east of Lake Kegonsa.[4]

[1] From AASHTO's Guide for the Development of Bicycle Facilities (1999), page 16.
[2] From the Wisconsin State Bicycle Map, created by WisDOT and the Bicycle Federation of Wisconsin.
[3] Bicycle Compatibility Index and model developed by FHWA. LOS D corresponds to "moderately low" compatibility, LOS E corresponds to "very low" compatibility, and LOS F corresponds to "extremely low" compatibility.
[4] From the Bicycle Transportation Plan for Madison and Urban Dane County (September 2000), published by the Madison Area Metropolitan Planning Organization.

C. Pedestrian Facilities

Sidewalks within the corridor are present only in Stoughton. Between Chalet Drive and Gjertson Street, sidewalks are continuous. East to Ashbury Lane and west to Hoel Avenue, they are discontinuous (see Figure 3.02-13).

There are no sidewalks within the McFarland portion of the corridor. South of McFarland, there is a short path within Dane County's Babcock Park that is used by pedestrians. It continues along the west side of the USH 51 bridge over the Yahara River.

Figure 3.02-13 Discontinuous Facilities in Stoughton (Left) and McFarland (Right)

South of McFarland, Babcock Park is located west of USH 51 while its overflow parking lot is located east of the highway. There are pedestrian warning signs with flashers at this location. However, there are no roadway markings or refuges.

Within Stoughton, there are pedestrian and pedestrian crossing warning signs at many crosswalks. The reconstruction of the downtown segment added colorized pedestrian crossings. However, traffic volumes and driver behavior limit pedestrian crossing opportunities at unsignalized intersections. The USH 51/CTH N intersection only has pedestrian heads across the north approach of the intersection. All other signals incorporate pedestrian heads and push buttons.

The Stoughton Area School District, which serves most of the corridor south of the CTH B (west)/ CTH AB intersection, designates several areas as "unusual hazards." The district busses students who would have to cross these areas, even if they would otherwise be ineligible for bussing. The District identifies three "unusual hazards" in the study corridor:

- USH 51 on the west side of Stoughton (for school grades K-6)
- USH 51/Wisconsin & Southern Railroad crossing (for school grades K-2)
- USH 51/CTH N intersection

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